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SHEET 1

Fig. 1

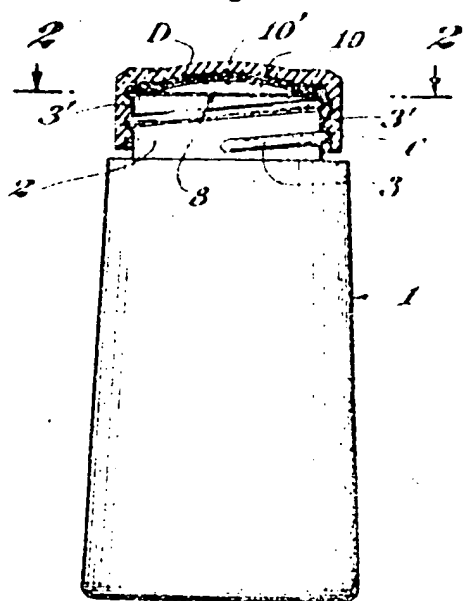


Fig. 2

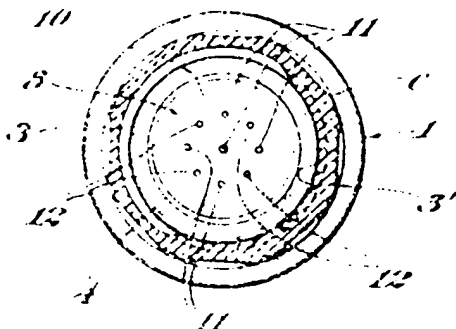


Fig. 3

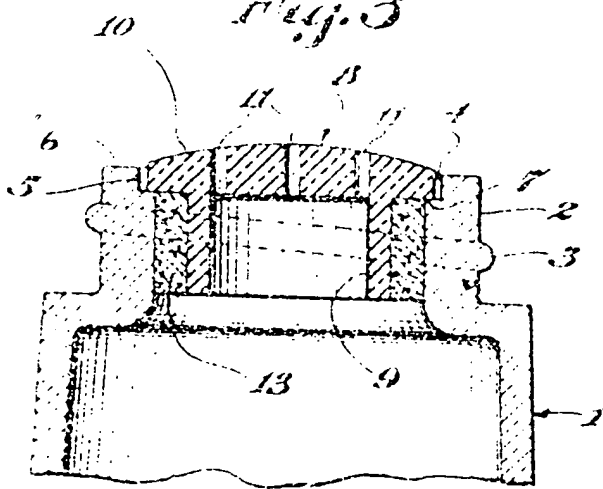


Fig. 4

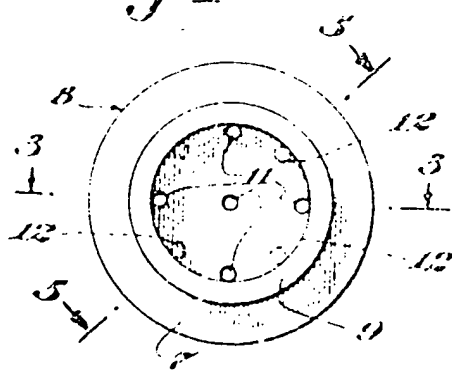
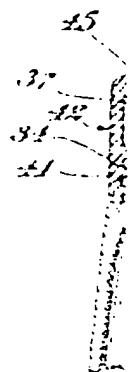
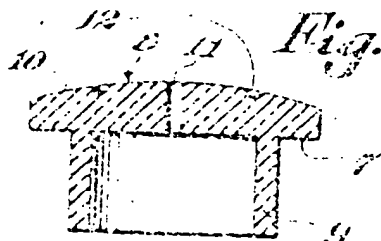
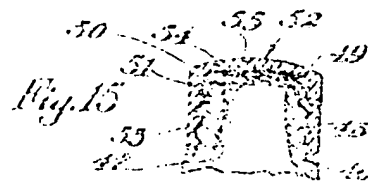
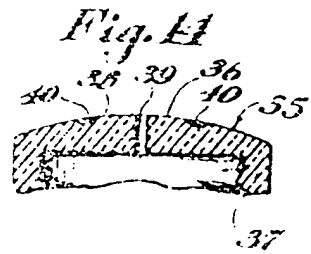
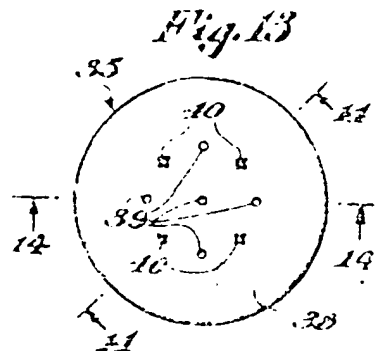
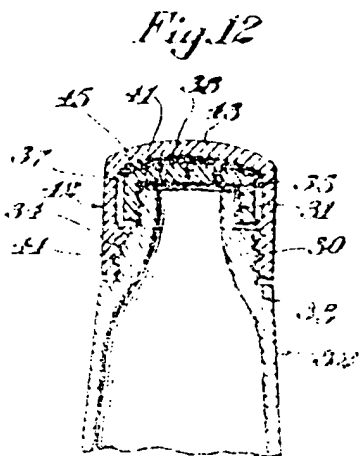
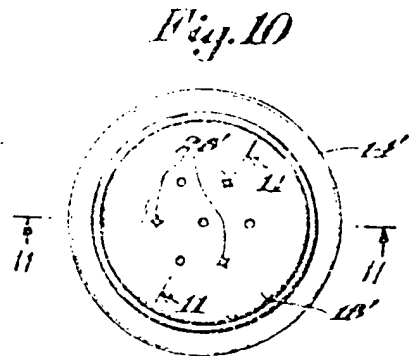
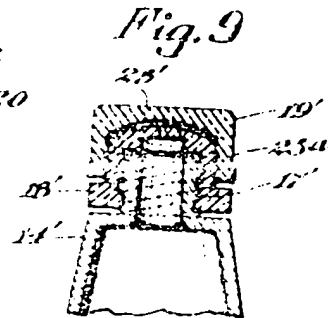
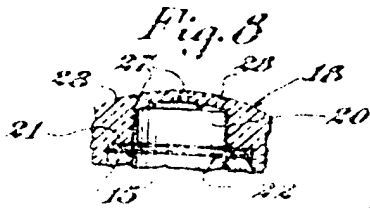
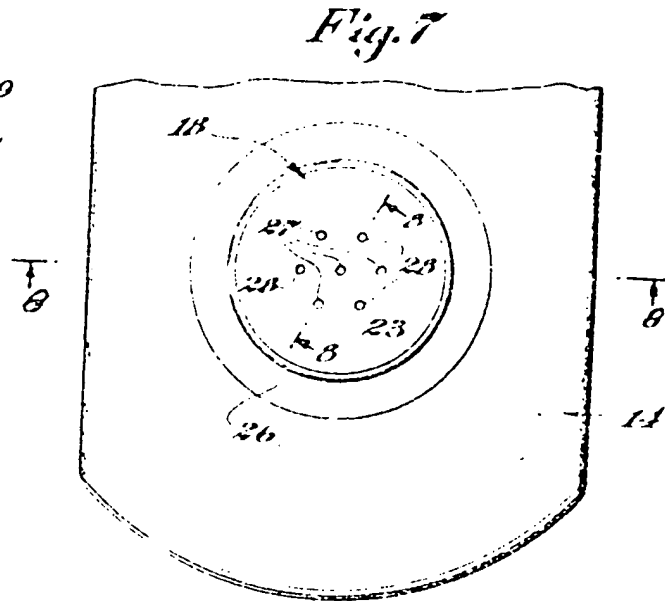
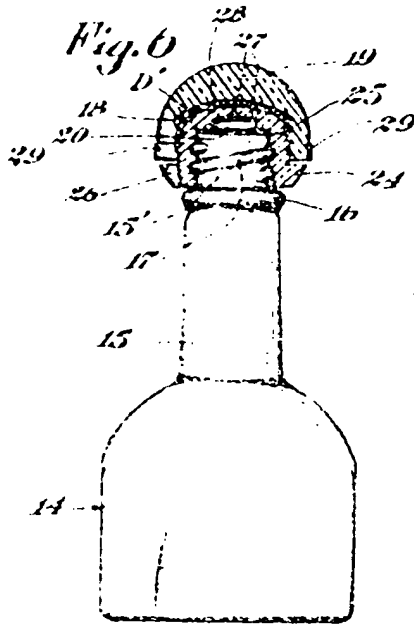


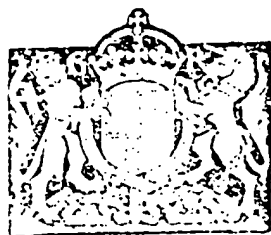
Fig. 5



X



# PATENT SPECIFICATION



Convention Date (United States): Aug. 1, 1933.

425,867

Application Date (in United Kingdom): July 31, 1934. No. 22318/34.

Complete Specification Accepted: March 22, 1935.

18. APR 1935

## COMPLETE SPECIFICATION

### Device for Applying a Deodorant Solution or the like to the Skin

WE, WILLIAM R. WARNER & COMPANY, LIMITED, of 360, Gray's Inn Road, London, W.C.1, England, a British corporation, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:

This invention relates to a device for applying a deodorant solution or the like to the skin.

Among the objects of the present invention, it is aimed to provide an applicator for deodorants or the like consisting in a head for the container of the deodorant which is preferably composed of a substance, such as a phenol-formaldehyde condensation product which is inert to any chemical reaction with the average deodorant solution and which may be polished to a smooth surface finish, devoid of any irregularities, nicks, burrs, and the like to insure against any injury to the skin of the user, such as scratches, abrasions or the like.

It is still another object of the present invention to provide an applicator head composed of a phenol-formaldehyde condensation product or other substance inert to any chemical reaction with the average deodorant solution and which may be so formed that no portion of the container which may be composed of glass or the like can even accidentally be brought into engagement with the skin of the user and which head may be polished to a smooth surface finish devoid of any irregularities, nicks, burrs, and the like to insure the user against any injury to the skin.

It is still a further object of the present invention to provide an applicator head composed of a phenol-formaldehyde condensation product or the like substance which is provided with one or more openings for the passage of the deodorant to the skin of the user, such openings or openings emerging in the skin, extending surface of the head adjacent to which openings or openings there are provided applicator depressions, recesses or the like to receive such openings and to hold the surface portions of the head adjacent to the openings in a position to insure a

uniform spreading of the liquid over the surface to be treated.

It is still another object of the present invention to provide a cap for the head having a seal consisting of one or more discs composed of cork, paper, fiber or the like which may be impinged between the cap and face of the head in which the openings emerge effectively to close and seal such openings and thus protect the contents from discharge between the head and the cap during shipment or the like.

In the accompanying drawings:

Figure 1 is a side elevation of a container equipped with one embodiment of the improved applicator and cap showing the cap in section;

Fig. 2 is a section on the line 2-2 of Fig. 1;

Fig. 3 is an enlarged transverse section partly broken away of a portion of the container equipped with the embodiment illustrated in Fig. 1;

Fig. 4 is a bottom plan of the applicator head shown in Fig. 3;

Fig. 5 is a section on the line 5-5 of Fig. 4;

Fig. 6 is a side elevation of another type of container equipped with another embodiment of the improved applicator and cap showing the applicator and cap in section;

Fig. 7 is an enlarged plan partly broken away of the embodiment illustrated in Fig. 6 with the cap removed;

Fig. 8 is a section on the line 8-8 of Fig. 7;

Fig. 9 is a transverse section partly broken away of a portion of still another type of container equipped with still another embodiment of the improved applicator and cap;

Fig. 10 is an enlarged plan of the applicator with the cap removed;

Fig. 11 is a section on the line 11-11 of Fig. 10;

Fig. 12 is a transverse section showing a portion of still another type of container with still another embodiment of the present invention as a container for the deodorant solution and the applicator head shown in Fig. 11.

Fig. 11 is a fragmental section on the line 11-11 of Fig. 13; and

Fig. 15 is a transverse section partly broken away of still another type of container equipped with still another embodiment of the improved applicator and cap.

In the embodiment shown in Figs. 1 to 5 inclusive, there is provided a container 1 which is preferably composed of glass or the like having a diminished neck 2 with an integral thread 3 formed thereon. The inner periphery of the neck 2 is preferably provided with an annular recess 4 adjacent its outer edge having a shoulder face 5 spaced from the outer substantially plane face 6 of the neck 2.

On the shoulder face 5, there rests the lower face 7 of the applicator head portion 8 having formed thereon an inwardly extending skirt 9, an outer convex face 10, openings 11, five in the present instance, extending through the head portion 8 to establish communication inwardly of the skirt 9 between the exterior and interior of the container 1, and recesses or depressions, such as the pockets or suction cups 12, see Fig. 5, receding from the convex face 10 of the head portion 8. For anchoring the head 8 in the neck 2, there is provided the annulus 13 composed of cork or other suitable compressible material, immune to chemical reaction with the deodorant solution. The annulus 13 is impinged between the outer periphery of the skirt 9 and the inner periphery of the neck 2 below the recess 4 with the lower face 7 of the head 8 engaging the shoulder face 5 of the recess 4.

The applicator head 8 is preferably composed of some suitable substance immune or inert to chemical reaction with the ordinary deodorant solution generally composed of aluminum chloride in solution. This head 8 may as an instance be composed of a phenol-terephthalic acid condensation product which is not only immune to chemical reaction with the ordinary deodorant solution as aforesaid but in addition lends itself admirably to have formed thereon a smooth polished finish, especially for the face 10, devoid of all irregularities, cavities, fins, burrs and the like.

The pockets 12 cooperate in the use of the applicator to break the surface tension of the fluid to be applied thereby, to facilitate the even and uniform spreading of the deodorant solution over the skin or other surface.

In the second embodiment, see Figs. 6 to 8, there is provided a transparent glass container 14 having a neck 15 with an opening 16 at its top, the neck 15 having an outer and inner face 17 and 18, respectively, spaced from one another in an

annular row concentric with the central opening 16. The pockets 12 are disposed in the same concentric row with one pocket between each two openings 16.

When not in use to protect the contents from discharge and similarly to protect the face 10 from injury, the cap C is provided which has an internal thread 3' to engage the thread 3 of the container 1 and an inner face 10' conforming substantially to the face 10 of the head 8. Between the face 10' of the cap C and the face 10 of the head 8, there are preferably provided as illustrated in Fig. 1, a plurality of layers or discs D composed of cork, paper, fiber or the like compressible material which are immune to chemical reaction with the deodorant solution and which will be impinged between the faces 10' and 10 to securely seal the openings 11. It is of course obvious that if this seal is disposed intimately to engage the face 6 of the container 1, it will prevent the liquid from escaping. This advantage is of course to be retained. But it is not enough since if any considerable quantity of the liquid should be permitted to pass to the outer surface 19 of the head 8, it will of course constitute a loss. This loss can be effectively avoided and at the same time the face 10 of the head 8 properly protected from injury when the seal D is pressed into intimate engagement with this head to shut off and positively seal the openings 11.

In the embodiment shown in Figs. 6, 7 and 8, there is illustrated a container 14 preferably composed of glass having an elongated narrow neck 15 provided with a diminished portion 15' defined by an annular head 16 from the main neck portion 15. The diminished neck portion 15' is preferably provided with an external thread 17 formed thereon.

In the present embodiment, the applicator head 18 and cap 19 constitute a substantially spherical shaped body in outward appearance when the cap 19 is in closed position as illustrated in Fig. 6. The head 18 is provided with an internal thread to engage the thread 17 of the neck portion 15 and is provided with a chambered portion 20 above the annular shoulder 21. The shoulder 21 has impinged between it and the outer free edge of the neck portion 15 a packing ring 22 preferably composed of one or more layers of cork or any other suitable compressible material, having a tapered outer face 23 and the head face 24.

The cap 19 is provided with a tapered inner face 25 and an outer face 26, the tapered inner face 25 being adapted to engage the tapered outer face 23 of the shoulder 21 to positively seal the openings 16.

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has, burrs or the like. The head 18 further has an enlarged lower portion 24 terminating in a diminished upper portion 25 defined from the lower portion by the plane annular shoulder 26. The outer periphery of the lower portion 24 is partly spherical to conform to the outer spherical periphery of the cap 19 and the outer periphery of the narrow portion 25 is preferably provided with an external thread to receive the internal thread of the cap 19. The face of the cap 19 opposed to the face 23 of the head 18 is preferably concave to correspond to the face 23 and accommodates one or more layers 19' composed of cork or other suitable compressible material to serve as a packing and snugly engage the face 23 of the head 18 to seal the openings 27 formed therein.

In the present instance, the head 18 is provided with four openings 27, three suction pockets or cups 28, the openings forming a communication between the chamber 29 and the exterior of the head 18.

Preferably the lower outer face of the cap 19 is provided with a knurled raised annular area 29 to be engaged by the user to facilitate turning the cap 19 when removing or attaching the same.

The threads of the neck portion 15' and of the outer surface of the upper portion 25 of the head may be inclined in opposite directions to form right and left hand threads respectively in order to facilitate turning the cap 19 into open position without disturbing the position of the head 18 on the container 11, or else the threads may be inclined in the same direction and have different rates of pitch as indicated, to wit, a greater pitch for the thread on the container than on the portion 25 so that it would require less effort to turn the cap relative to the head than to turn the head relative to the container, although an entirely satisfactory device has been produced when the threads were inclined in the same direction and made of the same pitch, it only the head was screwed onto the container tighter than the cap was screwed onto the head.

The embodiment illustrated in Figs. 9, 10 and 11 is substantially identical to the embodiment illustrated in Figs. 6, 7 and 8 except in the respects now to be pointed out.

The cap 19' and head 18' as an instance together form a substantially cylindrical shape rather than a spherically shaped head, the packing or suction cups 28 are of a shape further defined in part, the face of the container 11' is provided with a tapered neck portion 11' instead of the shoulder portion 11 illustrated in Fig. 6 and the

thread 17' is shown as a left hand thread instead of as a right hand thread, while the thread 25' on the upper portion of the cap 18' is right hand.

In the embodiment shown in Figs. 12, 13 and 14, the container has two threaded portions 30 and 31 of different diameters, the diameter of the threaded portion 30 being greater than the diameter of the threaded portion 31, the threaded portion 30 being defined from the main body 32 of the container by the shoulder 33 and the threaded portion 31 being defined from the threaded portion 30 by the shoulder 34.

In the present embodiment, the applicator 35 has a head portion 36 and a skirt 37. The skirt 37 has an internal thread for engaging the thread of the threaded portion 31 and the head portion 36 has a convex upper face 38, a plurality of openings 39 and star-shaped suction pockets 40.

In the present instance, an annular packing composed of one or more layers 41 of cork, paper, fiber or the like substance which will not react chemically or otherwise to aluminum chloride in solution or like ingredients of a standard desodorant, is preferably disposed between the free end of the threaded portion 31 and the imperforate portion of the head 35 to form a seal at such point. To enclose the head 36 and thereby protect the applicator face 38 from injury during shipment and at the same time seal the openings 39, there is provided the cap 42 having a head 43 provided with a concave inner face to conform to the face 38 of the head 36 and a skirt 44 having an internal thread to engage the thread of the threaded portion 30. Between the concave face of the cap 42 and the convex face 38 of the head 35 to effect the protection aforesaid to the face 38 and to effect the seal of the openings 39, there is preferably interposed a packing or seal consisting of one or more layers or discs 45 of paper, cork, fiber or the like.

With the embodiments shown in Figs. 11, 6, 9 and 12 and particularly in Figs. 6 and 9, it will of course be apparent that due to the skirt of the applicator, these embodiments can be used without danger of any portion of the glass or other engage- ment of the skin area to be treated, even when used to treat the skin area in the arm pits.

In the embodiment 11', illustrated in Fig. 13 there is shown a container 32' of a tapered shape, the glass or other engage- ment of the skin area to be treated, even when used to treat the skin area in the arm pits.

clamped a head 50, composed of celluloid or other suitable soft plastic substance having a high degree of elasticity. This cap 50 has a rolled annular flange at its periphery conforming in size and dimensions to the head 49 to frictionally engage the head 49 when pressed into place to anchor the cap 50 against accidental displacement when once positioned on the head 49. The cap 50 is provided with perforations similar to the perforations 39 of the embodiment illustrated in Fig. 13 and also provided with pockets similar to the pockets 40 of the embodiment illustrated in Fig. 13.

To elude the applicator head and thereby protect the treatment face of the head 50 from injury, there is provided a cap 52 preferably composed of a phenol-formaldehyde condensation product or the like, having a skirt 53 provided with an inner screw thread to engage the thread 48 of the neck 47, and an upper inner face 54 to cooperate with the sealing disc 55 composed of a plurality of layers of paper, cork, rubber, or the like, similar to the seal D of the embodiment illustrated in Fig. 1, which will be impinged between the treatment face of the head 50 and the inner face 54 of the cap 52 when the cap 52 is in place.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. A device for applying a deodorant solution or the like to the skin embracing a container, and a feeding device secured to said container having a head provided with discharge outlets for the deodorant solution, said head having a smooth distal treatment face in which said outlets engage and a plurality of suction pockets receiving from said face a break in surface tension of the liquid being discharged, thereby to facilitate an even and uniform spreading of the same.

2. A device according to claim 1 wherein the container is composed of glass or the like, and the feeding device is composed of a phenol-formaldehyde condensation product, the treatment face of said feeding device being convex, and the suction pockets being star-shaped.

3. A device according to claim 1 or claim 2, wherein the container is provided with a neck portion, and the

feeding device is provided with an extended skirt secured to and of greater diameter than the exterior of said neck portion, said extended skirt as well as the treatment face of said feeding device, being smoothly finished, devoid of any irregularities, fins, burs or the like whereby the device can be used without danger of any portion of the glass engaging the skin area to be treated even when used in the arm pits.

4. A device according to claim 1 wherein the container is composed of glass or the like and is provided with a head at the outer periphery of its upper end, the feeding device being composed of a material of high elasticity having a curled flange frictionally to engage said head and thereby anchor said device in place.

5. A device according to claim 4 wherein the feeding device is composed of celluloid or the like elastic substance.

6. The combination with a device according to claim 1 of sealing means consisting of a packing, and a cap having a head and an annular skirt, said head having an inner face conforming in shape to the shape of the treatment face of the feeding device, said skirt also having internal screw threads to engage external threads formed upon a neck portion provided upon the container, said neck is of glass, and to which neck said feeding device is so secured as to be inwardly clear of the thread thereon, said packing, consisting of one or more layers of paper or the like, according to the clearance afforded, and designed to be impinged between said inner face and treatment face when said cap is in place, to seal the discharge outlets.

7. The combination according to claim 6 wherein the feeding device is provided with a skirt, by means of which latter it is secured to the neck of the container.

8. A device according to any one of claims 1, 4, 5, 6 or 7, wherein the suction pockets are star-shaped.

9. Devices for applying deodorant solutions or the like to the skin, constructed, and arranged, substantially as described, with reference to the accompanying drawings.

Dated this 31st day of July, 1934.

J. E. EVANS-JACKSON & Co.,

(Agents for the Applicants.)